

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

This message was prepared by Lewis-Burke Associates LLC.



DEFENSE POLICY NEWSLETTER

September 4, 2019 | Lewis-Burke Associates LLC

IN THIS ISSUE

ON THE FRONT LINES

[5G Moves to the Forefront of DOD Technology Priorities](#)

NATIONAL SECURITY NEWS

[National Security Commission on AI Releases Interim Report](#)

[DHS Cybersecurity Agency Clarifies Mission and Assesses Threat Priorities with New Strategic Plan](#)

FUNDING AND ENGAGEMENT OPPORTUNITIES

[DARPA Releases Young Faculty Award Research Announcement](#)

[DARPA Announces Additional Polyplexus Pilot Topics for Fall 2019](#)

[DARPA I2O Releases BAA for Symbiotic Design Program](#)

[DARPA MTO Releases BAA for FOCII Program](#)

[DOD Releases FOA for Defense Education and Civilian University Research](#)

[IARPA Releases RFI on Energy Storage Systems](#)

[Space Accelerator Program Seeks Small Business Engagement](#)

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

[Military Services and DARPA Pre-Release SBIR/STTR Program Announcements](#)

WHAT WE'RE READING

[Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare'](#)

[AI Task Force Taking Giant Leaps Forward](#)

[DIA Director Outlines Top Three Priorities](#)

[Dear Tech Workers, U.S. Service Members Need Your Help](#)

ON THE FRONT LINES

5G Moves to the Forefront of DOD Technology Priorities

Last month, the Department of Defense's (DOD) Chief Technologist publicly pronounced that issues like 5G and trusted microelectronics are no longer just signals in the noise among the Pentagon's growing list of technological priorities. They are now at the top of the list.

At a Hudson Institute [event](#) on August 13, Under Secretary of Defense for Research and Engineering (USD R&E) Mike Griffin said that although he initially came into the job with development of hypersonics capabilities as his top priority, the Secretary of Defense has taken on major initiatives "at the other end of the spectrum, issues like microelectronics and 5G, to which I was, I would say, well less sensitive and well less educated."

Griffin's Deputy Under Secretary for Research and Engineering Dr. Lisa Porter has been assigned as the Department's lead for 5G. A new Technical Director for 5G, [Dr. Joseph Evans](#), a former program manager at the Defense Advanced Research Projects Agency (DARPA) Strategic Technology Office (STO), is now in place among the other assistant directors within the research enterprise. "Now we're developing initiatives. We have a program plan. We have put that before Congress, and it goes before the [Office of Management and Budget] this coming year," said Griffin, indicating there will be increased funding in the DOD's fiscal year (FY) 2021 budget request to address the DOD's 5G objectives and that additional funds may be requested in FY 2020.

At an August 8 Space and Missile Defense [symposium](#), Griffin tied research in 5G to microelectronics initiatives already underway at DOD, such as the \$459 million defense-wide research and development initiative for "Trusted and Assured Microelectronics." This initiative was included in the Department's FY 2020 budget for joint development of an assured 5G and internet of things (IoT) network, 5G modems, and end-user devices using assured design and fabrication processes.

DOD intends to make its infrastructure available to industry for experimenting and prototyping to speed commercial 5G development, Griffin said at the Hudson Institute, adding that DOD use cases include "smart ports, smart airports, smart depots, smart factories," all of which have both commercial and national security applications. The [Air Force](#) has already teamed with 5G wireless network providers to install commercial infrastructure at no cost to the DOD at 10 bases in support of secure mission applications. The DOD is also leveraging the [National Spectrum Consortium](#), a research and

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

co-existence and sharing. A Rapid Prototyping Project solicitation is anticipated for release in October 2019 on “Next Generation Information Communications Technology (5G).” Future solicitations will address spectrum aggregation technologies and risk-informed spectrum access.

The news of DOD’s increased attention to 5G applications comes following the release of two reports from influential DOD Advisory Committees. The Defense Innovation Board, which advises the Secretary of Defense, released “[The 5G Ecosystem: Risk and Opportunities for DoD](#)” in April 2019, recommending the DOD develop plans for sharing the prime sub-6GHz spectrum planned for 5G implementations globally with existing DOD systems that occupy that band and make R&D investments in security and resiliency in light of the global wireless ecosystem. Separately, the Defense Science Board (DSB), which advises Griffin’s office, released an [executive summary](#) of its task force on “Defense Applications of 5G Technology,” in June 2019. The DSB recommended the Department:

1. Adopt 5G for military use in contested environments
2. Develop a secure 5G system for contested environments and critical applications
3. Create test beds for exploring innovative use cases
4. Establish a telecommunications security program
5. Develop a 5G supply chain management strategy
6. Create a program for “vulnerability analysis”
7. Develop and execute a three-year 5G+ S&T roadmap
8. Develop a 5G+ standards engagement plan
9. Establish a new bi-direction spectrum sharing paradigm
10. Accelerate mmWave technology development and transition

The Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA) also released its own [assessment](#) on July 31, 2019. The “Overview of Risks Introduced by 5G Adoption in the United States” focused on the vulnerabilities 5G equipment may introduce to U.S. supply chains, deployment, network security, and the loss of competition and trusted options, and offered national opportunities to mitigate those 5G risks.

NATIONAL SECURITY NEWS

National Security Commission on AI Releases Interim Report

The National Security Commission on Artificial Intelligence (AI) released an interim [report](#) detailing the Commission’s activities and a projected timeline for its actions and future recommendations. The Commission—chaired by former Alphabet Inc. Chairman Eric Schmidt and seated with industry leaders, academics, and former government officials—was established in the fiscal year (FY) 2019 *National Defense Authorization Act* to offer recommendations on maintaining U.S. leadership in AI research, potential national security implications, and other issues pertaining to AI. Though the report was light on details, the Commission notes it created four working groups whose assessments will form the basis of the Commission’s ultimate recommendations. The working groups focus on the following topics:

- Maintaining U.S. Global Leadership in AI Research

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

- International Competitiveness and Cooperation in AI

The Commission is also pursuing three special projects addressing public-private partnerships in AI, ethical and responsible AI for national security applications, and managing data to support AI. The report notes that the Commission will continue its “assessment phase,” which has involved meeting with a variety of stakeholders for information gathering, until November 2019. Commissioners will then begin an “analysis phase” that will take up most of 2020 before releasing their final report. The final recommendations will be of interest to Congress and other policymakers, who have been considering the federal government’s role in AI development and applications.

DHS Cybersecurity Agency Clarifies Mission and Assesses Threat Priorities with New Strategic Plan

The Department of Homeland Security’s (DHS) Cybersecurity and Infrastructure Security Agency (CISA) released its new “strategic intent” [plan](#), clarifying the agency’s mission and giving a sense of the priority threats the agency will look to address. CISA intends to further develop this interim document – its first public plan since the agency’s 2018 reorganization – into a longer-term strategic plan. This may influence future research interests pertaining to cybersecurity and infrastructure protection within the DHS Science and Technology (S&T) Directorate.

The document identifies CISA’s role as DHS’s risk management agency and states the agency will serve as the convener and lead for federal agencies and other partner organizations to protect critical infrastructure from cyber and physical threats (both natural and man-made). The document recognizes CISA’s role in protecting the 2018 elections from cyber threats as a model for future engagements in other areas. CISA also describes its five areas of focus, corresponding to specific threats:

1. **China, Supply Chain, and 5G:** CISA considers China’s efforts to compromise the U.S. global supply chain the most pressing, long term threat and will seek to help implement 5G wireless networks or other technologies to help manage this risk
2. **Election Security:** CISA intends to work with state and local governments, along with their partners, to build more secure and resilient election infrastructure
3. **Soft Target Security:** CISA will work with partners to develop innovative ways to manage risks in crowded public venues
4. **Federal Cybersecurity:** In response to several highly reported cyber-attacks, CISA will prioritize supporting federal agencies, as well as state and local governments, in building its cybersecurity capabilities to keep pace with the cyber threat environment
5. **Industrial Control Systems (ICS):** Because most of the industries that are part of the nation’s critical infrastructure are dependent on ICS, CISA intends to lead federal efforts to coordinate with the ICS community to develop ICS that are secure and resilient to cyber threats

The agency, previously named the National Protection and Programs Directorate (NPPD), went through a reorganization in November 2018 after President Trump signed the *Cybersecurity and Infrastructure Security Agency Act of 2018*. Previously, DHS officials expressed frustration that the agency’s name made it difficult to communicate the agency’s role in cybersecurity, an increasing priority of Congress and the Trump Administration.

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

DARPA Releases Young Faculty Award Research Announcement

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) recently released its Young Faculty Award (YFA) research announcement (RA). The YFA program aims to expose elite researchers in junior faculty or equivalent positions at academic and non-profit research institutions to the Department of Defense's (DOD) mission, challenges, and needs. The RA includes 27 topic areas from across DARPA's six technology offices. Executive summaries should be submitted through DARPA's submission website at <https://baa.darpa.mil> no later than **September 18, 2019 by 4:00 PM ET**. Full proposals are due by **November 19, 2019 by 4:00 PM ET**. More information can be found in Lewis-Burke's analysis of the solicitation [here](#). The full solicitation can be found at www.grants.gov under solicitation number "DARPA-RA-19-01."

DARPA Announces Additional Polyplexus Pilot Topics for Fall 2019

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) released additional Polyplexus Pilot Topics earlier this month:

- Rethink Physics Modeling (Due **October 14, 2019**)
- Hardware Trojan Identification (Due **October 21, 2019**)
- Quantum Bio-Computing (Due **October 29, 2019**)
- Cognitive Dissonance Detections (Due **November 14, 2019**)

Polyplexus is an online platform that connects the research community and DARPA program managers to facilitate conversations that result in abstract and proposal submissions for federal research programs. DARPA DSO intends to make at least one \$100,000 one-year award for each topic area following online discussions. Abstracts, though not required, are highly encouraged in order to reduce the effort and expense of submitting out-of-scope proposals. All current topics can be found at www.grants.gov under solicitation number "HR001119S0075."

DARPA I2O Releases BAA for Symbiotic Design Program

The Defense Advanced Research Projects Agency (DARPA) Information Innovation Office (I2O) [announced](#) its Symbiotic Design for Cyber Physical Systems (Symbiotic Design) program, which seeks to integrate machine learning into the cyber physical systems design process for military-relevant systems. Proposals should be submitted no later than **October 14, 2019 at 12:00 PM ET**. DARPA I2O anticipates making multiple awards but does not specify the amount of each individual award. The broad agency announcement can be found at www.grants.gov under solicitation number "HR001119S0083."

DARPA MTO Releases BAA for FOCII Program

The Defense Advanced Research Projects Agency (DARPA) Microsystems Technology Office (MTO) [announced](#) its FOcal arrays for Curved Infrared Imagers (FOCII) program. The FOCII program seeks to develop curved focal plane arrays (CPFAs) for state-of-the-art advanced imaging systems. Proposals should be submitted no later than **October 18, 2019 at 4:00 PM ET**. DARPA MTO anticipates making multiple awards but does not specify the amount of each individual award. The broad agency announcement can be found at www.grants.gov under solicitation number "HR001119S0078."

DOD Releases FOA for Defense Education and Civilian University Research

The Department of Defense (DOD) released a funding opportunity announcement (FOA) for the Defense

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

Professional Military Education (PME) institutions to conduct social science research of interest to DOD, with the goal of building stronger relationships with the social science community. The topics of interest for this program are the same as the priorities [listed](#) under the Minerva Research Initiative, DOD's signature social science research program, but the guidelines and deadlines for DECUR are different. White papers, while not mandatory, are strongly encouraged and should be submitted no later than **September 12, 2019 at 3:00 PM ET**. Full proposals are due **November 19, 2019 at 3:00 PM ET**. The full solicitation can be found at www.grants.gov under solicitation number "WHS-AD-FOA-DECUR-19."

IARPA Releases RFI on Energy Storage Systems

The Intelligence Advanced Research Projects Activity (IARPA) released a request for information (RFI) on electrical energy storage systems and components. The RFI is seeking information on technologies related to portable electronic devices and high-power electric vehicles. The RFI includes two specific research categories: 1) high energy storage systems and 2) thermally resilient energy storage systems. The RFI is an opportunity for researchers to influence the technical research efforts of IARPA.

Responses to the RFI are due on **September 23, 2019** no later than **5:00 PM ET**. The full RFI can be found at www.fbo.gov under solicitation number "IARPA-RFI-19-09."

Small Businesses Sought for Space Accelerator Program

The Air Force Research Laboratory (AFRL) Space Vehicles Directorate (SVD) is looking to engage with small businesses that will work alongside the [Catalyst Space Accelerator](#) program to explore "space-based intelligence, surveillance and reconnaissance technologies." The accelerator is a 12-week program that aims to fill technology gaps and helps small businesses "determine if their technologies are relevant to the needs of potential customers." KiMar Gartman (contact: kimar.gartman@c-trac.org), director of the accelerator, said that the "research lab is interested in systems such as space-based sensors that can discriminate between different objects." Previous topics have included positioning, navigation and timing, and resilient commercial space communication. The accelerator program is scheduled for September, along with a demonstration day in November. All the events will be held in Colorado Springs, Colorado. More information can be found [here](#).

AFRL Seeks Engagement with Startups

The Air Force Research Laboratory (AFRL) at Kirtland Air Force Base, New Mexico (NM) is partnering with the ABQid business accelerator for the second annual Hyperspace Challenge. Last year, AFRL signed a three-year contract with the ABQid accelerator to help construct collaborative relations with private companies working on new technologies that improve military capabilities. This year, challenges identified by program managers include aggregating large data from small satellites, enabling data transfer from low-Earth-orbiting satellites, and developing a new CubeSat communications system. While the challenge is national in scope and open for businesses to apply, research universities and interested entities may benefit from engaging with AFRL program managers to learn more information on AFRL priorities in this space. The program aims to build "direct connections between innovative startups and government contractors focused on critical issues," according to Matt Fetrow (contact: matthew.fetrow@us.af.mil, 505-620-5204), director of AFRL NM's Tech Engagement Office. Participants will gather in Albuquerque for a week-long accelerator, culminating in demo-day pitches on November 20, 2019. The full article can be found [here](#).

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

Small Business Technology Transfer Programs (SBIR/STTR) are partnering to hold additional Pitch Days, where small businesses have an opportunity to pitch ideas and technologies and potentially get a contract on the same day. The Pitch Day provides opportunities for universities and organizations who have developed technologies stemming from research to contract with the Air Force. The focus of these Pitch Days will be on later stage development rather than basic and applied research. The Air Force announced this past spring its intentions to enhance the STTR program to access more university-initiated research and development (R&D).

This follows a successful pilot Pitch Day in March in New York City, where 51 companies were awarded almost \$9 million in contracts. Two additional events took place in July: an Unmanned Aircraft Systems (UAS) Pitch Day and a “Kessel Run” Pitch Day.

Pitch Days will be held on the following topics:

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

November 4-8	Air Force Space Pitch Day	San Francisco, CA	<ul style="list-style-type: none"> • Data mining • Space visualization • Space communications
December 3-5	Simulators Pitch Day	Orlando, FL	<ul style="list-style-type: none"> • Simulator technologies
Fall 2019	Joint Strike Fighter Pitch Day	TBD	<ul style="list-style-type: none"> • Artificial Intelligence for the optimization of air system acquisition enterprises • Machine Learning for the optimization of air system acquisition enterprises • Data analytics tools for the optimization of air system acquisition enterprises
November 13-14	Fighter/Bomber Pitch Day	Dayton, OH	<ul style="list-style-type: none"> • Cyber-related commercial innovations to improve our Fighter/Bomber portfolio of aircraft
November 13-14	Rapid Sustainment Pitch Day	San Francisco, CA	<ul style="list-style-type: none"> • Innovative technologies and/or processes that could decrease Operations and Sustainment Costs or Increase Readiness
November 13-14	Mobility and Training Aircraft Pitch Day	Dayton, OH	<ul style="list-style-type: none"> • Maintenance and manufacturing technologies for aircraft including digital technologies
November 13-14	Intelligence, Surveillance, and Reconnaissance (ISR) and Special Forces (SOF) Pitch Day	Dayton, OH	<ul style="list-style-type: none"> • Explore innovative technologies and/or processes that could impact ISR systems and SOF operations
November 13-14	Airborne Communications Pitch Day	Dayton, OH	<ul style="list-style-type: none"> • Improving communication systems, protecting intellectual property and introducing Additive Manufacturing (AM) into current sustainment efforts
First week of November	Hypersonics Pitch Day	Ft Walton Beach, FL at the NDIA Weapons Symposium	<ul style="list-style-type: none"> • Explore innovative technologies and/or processes that could increase hypersonic systems capabilities
TBD	Base of the Future Concepts, Technologies, and Technology Applications	TBD	<ul style="list-style-type: none"> • Explore options for Base of the Future concepts that will empower facility design/construction, infrastructure, passive and active information technology (IT), energy efficiency, force protection, urbanization, resiliency and other novel concepts

Submission Information: Instructions for submitting pitches are not yet available. During the earlier Pitch Days, applicants submitted pitches online to Air Force SBIR/STTR, who would then invite selected applicants to attend the events. Leading up to these Pitch Days, a Department of Defense solicitation was released at www.sbir.gov at the beginning of the previous month. Air Force SBIR/STTR encourages interested organizations to monitor the Pitch Day [webpage](#), where more information will be posted.

Award information: In previous solicitations, proposers could be awarded up to \$75,000 for a Phase I award, a three-month feasibility study, with a possibility for a \$750,000 Phase II award to develop a

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

Sources and Additional Information:

- More information on Air Force Pitch Days is available at <https://www.afsbirsttr.af.mil/AF-Pitch-Day/How-to-submit/> and at <https://www.afsbirsttr.af.mil/News/>.
- Solicitations and submission instructions from the previous Pitch Days can be found at <https://www.sbir.gov/node/1604627>.

Military Services and DARPA Pre-Release SBIR/STTR Program Announcements

Multiple Department of Defense (DOD) Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs announced the pre-release of their broad agency announcement (BAA) topics on August 23, 2019, with an anticipated release date of September 24, 2019 for proposal submissions. The DOD SBIR 19.3 and STTR 19.C BAA topics can be viewed [here](#) for the Army, Navy, Air Force, Defense Health Agency, Missile Defense Agency, Office of the Secretary of Defense, and U.S. Special Operations Command (USSOCOM). Interested parties can also ask questions through the SITIS Q&A system and contact topic authors directly (contact information is listed with the topic). The Air Force Out of Cycle CSO BAA is also in pre-release [here](#). The DARPA Small Business Programs Office (SBPO) has released two SBIR/STTR Opportunities (SBOs) available [here](#). Additionally, the Army STTR program will host an Industry Day at the University of North Carolina-Chapel Hill (NC) Friday Center on September 10, 2019 in support of its 19.C Broad Agency Announcement topics. For information, email usarmy.rtp.ccdc-arl.mbx.sttr-pmo@mail.mil or register at: <https://army-sttr-industry-day.ipages.co/registration-page/>.

Topics across the DOD SBIR/STTR programs have been updated so that more than half the topics address the top Research, Technology, and Laboratory priorities: 5G; Artificial Intelligence (AI)/ Machine Learning (ML); Autonomy; Biotechnology; Cybersecurity; Directed Energy (DE); Hypersonics; Microelectronics; Networked Command, Control, and Communications (C3); Nuclear; Quantum Science; and Space. The pre-release of additional DARPA programs will begin on September 9, 2019, with an anticipated BAA release of September 10, 2019.

WHAT WE'RE READING

Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare'

Defense One discusses the People's Liberation Army (PLA) of China and its advancements in biotechnology applications in military science. The PLA describes biotechnology as a "new domain of warfare" that can change the character of conflict. Of note, the PLA is interested in developing biotechnology as an offensive capability through the use of "genetic weapons and bloodless warfare." The PLA is also seeking to understand how biology can intersect with other disciplines and expand research in human genome editing and artificial intelligence (AI). Read more [here](#).

AI Task Force Taking Giant Leaps Forward

Army.mil discusses the impact of artificial intelligence (AI) research and development partnerships for the Army's AI Task Force. A partnership between Carnegie Mellon University, including the university's

[Subscribe](#)[Past Issues](#)[Translate ▾](#)

automated recognition to identify military systems in pictures and data science applications to fix helicopter maintenance alerts. Read more [here](#).

DIA Director Outlines Top Three Priorities

Defense.gov shares the Defense Intelligence Agency (DIA) Director's top three priorities: maintaining the Joint Worldwide Intelligence Communications System (JWICS), operationalizing the new Machine-Assisted Analytic Rapid-Repository System (using cloud computing) along with AI and machine learning, and using more Open-Source Intelligence. According to DIA Director Lt. Gen. Robert P. Ashley, this three-pronged approach to improve intelligence gathering for DIA would ensure resiliency, operational superiority, and accuracy. Read more [here](#).

Dear Tech Workers, U.S. Service Members Need Your Help

The New York Times featured an opinion about the influence of U.S. tech companies on advances in combat technology. Google employees, who recently signed a petition "urging the company to refuse to build weapons technology," are highlighting hesitations towards America's private sector contributing to the "business of war." However, advances in technology, such as tools that "enhance situational awareness and enable fast combat decisions," could save innocent lives in combat zones and help achieve tactical success. Read more [here](#).

Copyright © 2019 Lewis-Burke Associates LLC, All rights reserved.



[unsubscribe from this list](#) | [update subscription preferences](#)